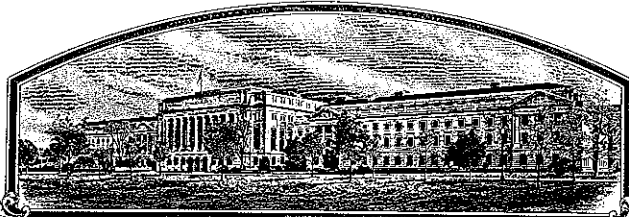


No.



9700302

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THEREOF IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'AG2301'



Attest:

Ann Marie Ives

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirtieth day of July in the year of our Lord one thousand nine hundred and ninety-nine.

Don Gilman

Secretary of Agriculture

REPRODUCE LOCALLY. Include form number and date on all reproductions.

FORM APPROVED - OMB NO. 0581-4

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
ASGROW SEED COMPANY		AGW22601	AG2301
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9700302
7089-248-23 2605 East Kilgore Road Kalamazoo, MI 49001-1744		616-384-5548	
		6. FAX (include area code)	FILING DATE
		616-384-5652	5-28-1997
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)		FILING AND EXAMINATION FEE: \$ 2450 DATE 5-27-97 CERTIFICATION FEE: \$ 300.00 DATE 6/24/1999
Glycine max	Leguminosae		
9. CROP KIND NAME (Common name)			
Soybean			
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)			
Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
Delaware		March 22, 1968	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
Wayne Hoener, 7089-248-23 Asgrow Seed Company 2605 East Kilgore Road Kalamazoo, MI 49001-1744			616-384-5548 608-755-1777
			15. FAX (include area code)
			616-384-5652 608-755-0128

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

- a. ☒ Exhibit A. Origin and Breeding History of the Variety
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of the Variety
- d. ☒ Exhibit D. Additional Description of the Variety (Optional)
- e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
- f. ☒ Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)
- g. ☒ Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)

☐ YES If "yes," answer items 18 and 19 below ☒ NO If "no," go to item 20

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☒ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

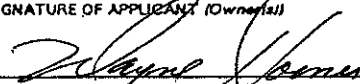

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?

☐ YES If "yes," give names of countries and dates ☒ NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s))	SIGNATURE OF APPLICANT (Owner(s))
	
NAME (Please print or type)	NAME (Please print or type)
Wayne Hoener	Alan K. Walker

CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Soybean Product Manager	5-15-97	Director Soybean Research	5-15-97

ASGROW SEED COMPANY
PVP APPLICATION AG2301
MAY, 1997

EXHIBIT A
ORIGIN AND BREEDING HISTORY OF AG2301

- 1993 Cross RP931461 was made in Isabela, Puerto Rico.
Parentage: XP2514*RP931179
RP931179 = XP2514*A1900*A2396*40-3-2
- 1993-94 F1 and F2 generation was grown near Isabela, Puerto Rico and advanced using modified pedigree selection.
- 1994 Winter F3 bulk populations were grown in Isabela, Puerto Rico and single plants pulled.
- 1994 Summer Single plant selections of F3 derived F4 rows were grown in progeny rows in Janesville, WI. Row RP93146 W94-23034 was selected based on visual appearance and agronomic characteristics.
- 1994-95 RP93146 W94-23034 was increased in winter nursery.
- 1995 RP931461 W94-23034 was entered in a yield trial at 10 locations, where it placed 4th of 35 entries.
- 1995-96 RP931461 W94-23034 was renamed AGW22601 and increased in winter production. Breeder seed was developed from purification and roguing of F3 derived F6 seed.
- 1996 AGW22601 was entered in a yield trial at 14 locations across the northern corn belt. It was renamed AG2301.

AG2301 is uniform and stable within commercially acceptable limits based on trial observations since 1994. As with any other soybean variety, variants can occur for almost any characteristic during the course of repeated sexual reproduction.

Request: Please specifically address which particular agronomic and visual characteristics were used as selection criteria during the development of 'AG2301'.

Response: The nominated progeny row was selected based on visual appearance. Asgrow bases visual appearance selection upon uniformity for visual phenotype (i.e., flower color, pubescence color, hilum color, and pod wall color), maturity uniformity and plant height uniformity among individual plants, and resistance to Roundup herbicide (sprayed with 32 oz./acre), if variety is a RoundupReady variety. Also, we select for a visual appearance which shows a potential for high yield.

ASGROW SEED COMPANY
PVP APPLICATION AG2301 Soybean
MAY, 1997

9700302

EXHIBIT B
Novelty Statement Concerning AG2301 Soybean

To our knowledge, the soybean varieties that closely resemble AG2301 are A2242 and A2396:

- | | | |
|--|--------|-------------------|
| 1. Hilum color | AG2301 | - Black |
| | A2242 | - Gray |
| | A2396 | - Imperfect black |
| 2. Tolerance to glyphosate herbicide-
Roundup Ready™ gene | AG2301 | - Present |
| | A2242 | - Absent |
| | A2396 | - Absent |

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Asgrow Seed Company	TEMPORARY DESIGNATION AGW22601	VARIETY NAME AG2301
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 2605 East Kilgore Road Kalamazoo, Michigan 49001		FOR OFFICIAL USE ONLY PVPO NUMBER 9700302

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Consoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gazoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hammon 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Carsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☐ 21 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Carsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☐ 0 ☐ 5

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★

☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☐ 0Bacterial Blight (*Pseudomonas glycines*)

★

☐ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★

☐ 0Brown Spot (*Septaria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)

★

☐ 0

Race 1

☐ 0

Race 2

☐ 0

Race 3

☐ 0

Race 4

☐ 0

Race 5

☐ 0

Other (Specify)

☐ 0Target Spot (*Corynespora cassicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0Powdery Mildew (*Microspora diffusa*)

★

☐ 0Brown Stem Rot (*Cephalosporium greasatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *sojivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 0 Race 2 ☐ 2 Race 3 ☐ 2 Race 4 ☐ 2 Race 5 ☐ 0 Race 6 ☐ 2 Race 7
- ☐ 0 Race 8 ☐ 2 Race 9 ☐ 2 Other (Specify) 10, 13, 14, 18, 21, 26

VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 0 Race 4 ☐ 0 Other (Specify) _____
- ☐ 0 Lance Nematode (*Haploelaimus Colambus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ 0 OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 2 Iron Chlorosis on Calcareous Soil
- ☐ 0 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ 0 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape		Seed Coat Luster	
Leaf Shape		Seed Size	A1923
Leaf Color		Seed Shape	A1923
Leaf Size		Seedling Pigmentation	

22. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ 100
				CM Width	CM Length	% Protein	% Oil		
AG2301 Submitted	128	1.5	80					16.0	
A2396 Name of Similar Variety	126	1.5	84					14.6	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.J. Buzzell. 1963. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTi-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1975. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

9700302

ASGROW SEED COMPANY
PVP APPLICATION AG2301 Soybean
MAY, 1997

EXHIBIT D
Additional Description of AG2301 Soybean

AG2301 is a early maturity group II varicty with resistance to Roundup[™] herbicide . It has very high yield potential. It has comparable yields to lines of similar maturity and has excellent agronomic characteristics, including lodging resistance. It is very broadly adapted but should do very well on heavier soils which are prone to Phytophthora Root Rot as it has a major gene for Phytophthora resistance, Rps1k. It also has demonstrated average tolerance to iron chlorosis and Sclerotinia (White Mold).

REPRODUCE LOCALLY. Include form number and date on all reproductions.

FORM APPROVED - OMB NO. 0581-0055

EXPIRES: 12-31-96

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) ASGROW SEED COMPANY	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER AGW22601	3. VARIETY NAME AG2301
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 7089-248-23 2605 East Kilgore Road Kalamazoo, MI 49001-1744	5. TELEPHONE (include area code) 616-384-5548	6. FAX (include area code) 616-384-5652
7. PVPO NUMBER 9700302		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

☒ YES ☐ NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company?
If no, give name of country _____

☒ YES ☐ NO

10. Is the applicant the original breeder? If no, please answer the following:

☒ YES ☐ NO

a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country _____

☐ YES ☐ NO

b. If original rights to variety were owned by a company:

Is the original breeder(s) U.S. based company? If no, give name of country _____

11. Additional explanation on ownership (If needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter.

Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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